Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:	)	
	)	
Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102
	)	
Southern Communications Services, Inc. Petition for Limited Waiver of Section 20.18 of the Commission's Rules	)	

SOUTHERN LINC®
PETITION FOR LIMITED WAIVER OF SECTION 20.18 OF THE COMMISSION'S RULES

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Summary

Southern Communications Services, Inc. d/b/a Southern LINC® ("Southern") seeks a limited waiver of the Commission's rules governing the time frames for the deployment of E-911 Phase II services. Southern is committed to public safety and the nationwide rollout of E-911. Southern's commitment to the deployment of Phase II service has led it to amend its location technology choice from a network-based solution to an Assisted GPS technology for Phase II compliance on its iDEN network, in large part because of its concerns over the accuracy capabilities and the availability of network-based solutions for iDEN. Southern's technology choice and its decision not to go forward with a network solution (as originally intended) were arrived at after extensive and thorough review of all available location solutions. Southern's decision to adopt an A-GPS solution is based on its desire to provide emergency location services that will best serve its customers and, likewise, will enable public safety organizations to better locate callers in emergency situations.

Southern believes that a handset-based solution holds the most promise for meeting the Commission's accuracy requirements for Phase II on Southern's largely rural service territory. Southern is working closely with its handset vendor, Motorola, to develop the requisite handset and software upgrades necessary to meet the Commission's Phase II requirements.

Southern proposes the following deployment schedule:

- Initial Deployment will begin December 1, 2002;

- 5% of all new iDEN handsets sold by Southern LINC beginning December 31, 2002;
- 50% of all new iDEN handsets sold by Southern LINC by December 31, 2003;
- 100% of all new iDEN handsets sold by Southern LINC by December 31, 2004, to non-public safety iDEN customers; and
- 95% of Southern's interconnected, non-public safety iDEN customer base by December 31, 2005.

The Commission provided for carrier waivers where there is no available Phase II compliant solution that will meet the Commission's deployment timetable, which is the case for Southern. In this specific and limited waiver request, Southern sets forth a path to compliance as required by the Commission. Southern believes that the grant of this waiver would best serve the public interest, as it will permit Southern to deploy a more accurate handset-based solution for its iDEN network.

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Southern Communications Services, Inc., d/b/a Southern LINC® ("Southern"), by and through its attorneys, pursuant to Sections 1.3 and 1.925 of the Federal Communications Commission's ("Commission") rules hereby seeks a limited waiver of the Commission's rules governing the time frames for deployment of Enhanced 911 ("E-911")[1] Phase II automatic location services to permit Southern to provide Phase II service using Motorola's Assisted Global Positioning System ("A-GPS") solution. Southern intends to implement the following compliance schedule:

- Initial Deployment will begin December 1, 2002;
- 5% of all new iDEN handsets sold by Southern LINC by December 31, 2002;

[1] 47 C.F.R. § 20.18(e) and (g) (2000).

- 50% of all new iDEN handsets sold by Southern LINC by December 31, 2003;
- 100% of all new iDEN handsets sold by Southern LINC by December 31, 2004, to non-public safety iDEN customers; and
- 95% of Southern's interconnected, non-public safety iDEN customer base by December 31, 2005.

As demonstrated herein, a waiver of the Commission's rules would serve the public interest and is justified based on circumstances that are unique to Southern's request.

I. Introduction

Southern, a wholly-owned subsidiary of Southern Company, operates a unique digitally enhanced, wide-area Specialized Mobile Radio ("SMR") system in the Southeastern United States, covering the states of Alabama and Georgia, the Panhandle of Florida, and Southeastern Mississippi. Southern's wide-area SMR system employs Motorola's proprietary Integrated Digital Enhanced Network Technology ("iDEN"), a digitally enhanced, time division multiple access technology.

Southern provides interconnected voice, dispatch radio, text messaging, paging, and Internet service via a digital handset and supported by a single switch network. Southern's footprint covers more than 127,000 square miles encompassing urban centers such as Atlanta and Birmingham, as well as large rural areas. While many of its customers are business users, Southern also provides service to a large number of customers with public safety responsibilities including electric utility employees,

government agencies, PSAP coordinators, police and fire departments, and ambulance services, (collectively "Public Safety customers") who rely on Southern's system for their communications services. A substantial portion of Southern's service is dispatch radio and interconnected telephony oriented, with data, Internet, and paging services constituting a growing but smaller percentage of overall usage on the system. Southern offers customers the ability to purchase its various services as a package. Customers also have the ability to choose among Southern's services, and many, for instance, choose dispatch radio and paging but not interconnected telephony.

Southern is committed to delivering E-911 service to its customers quickly and effectively. Southern is also committed to the deployment of Phase II location technology. Southern believes that its compliance schedule is reasonable and responsible based on the representations of Southern's technology vendor, Motorola. Given that many of Southern's customers are members of the public safety community, Southern is well aware of the critical importance of their communications and is committed to assisting them in meeting all their service obligations. As more fully detailed below, Southern continues to work diligently to deploy Phase I technology to all the PSAPs within its service territory, in order for its customers to reap the benefits of wireless location technology.

The totality of the circumstances associated with Southern's deployment of E-911 Phase II requires it to seek "specific, focused and limited" relief in the form of a waiver

of the Phase II rules.[2] Due to circumstances outside its immediate control, Southern will not be able to achieve compliance with the Commission's Phase II implementation deadlines. The Commission has recognized in the past that a waiver of Commission deadlines is appropriate when noncompliance "is due to circumstances beyond the licensee's control."[3] As will be demonstrated more fully below, Southern has in good faith and with great diligence pursued an E-911 Phase II solution. To that end, it contacted all network and handset vendors who had indicated plans and timetables for development of a Phase II compliant solution that might include iDEN technology, and it evaluated the limited options that presented themselves as a result.

In accordance with the waiver requirements set forth by the Commission in the *Fourth MO&O*, this Petition outlines Southern's experiences in trying to obtain a feasible network solution, as well as Southern's efforts associated with its recent decision to go forward with a handset solution.[4] Southern's selection of a handset solution is the result of well over a year of research and analysis, including discussions with both handset and network location technology vendors. As will be more fully detailed below, even if Southern had continued to pursue a network-based solution (and not chosen to pursue an A-GPS solution) a rule waiver would have been necessary. By implementing the handset

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2 *In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Fourth Memorandum Opinion and Order, CC Docket 94-102, 15 FCC Rcd. at 17458 ¶ 44 (released September 8, 2000) ("*Fourth MO&O*").

3 *McElroy Electronics*, 13 FCC Rcd. 7291 at ¶ 8 (1998).

4 *See* Amended Report on Implementation of Wireless E-911 Phase II Automatic Location Identification (filed by Southern on August 30, 2001), CC Docket No. 94-102 (hereinafter "Amended Report").

solution, however, Southern will be in a better position to offer its customers the most reliable and accurate solution within a reasonable time frame.

Southern will show that it is on a clear path to compliance with the Phase II requirements. Motorola, Southern's equipment vendor, has indicated that its "A-GPS technology will meet the FCC's accuracy requirements for handset-based solutions."[5] While Southern is unable to accurately estimate precisely when it will be in full compliance with the Phase II rules, it is proposing a schedule that it believes is achievable based upon the information that it has available at this time, chiefly, the representations of Motorola and Southern's knowledge of the unique needs of its customers .

II. Summary of Phase II E-911 Requirements and FCC Standard for Waiver

The Commission adopted the E-911 rules in 1996 in an effort to ensure that all wireless phone users would have access to 911 emergency services.[6] Sections 20.18(e)-(h) of Commission's rules require wireless carriers to provide E-911 Phase II (latitude and longitude) information no later than October 1, 2001. The Commission's *Fourth MO&O* eliminated the separate phase-in requirement that was triggered by Public Safety Answering Point ("PSAP") requests for Phase II service and modified the activation levels for handset solution, setting the new activation levels as follows: 25% of all new activations by December 31, 2001; 50% of all new activations by June 30, 2002; and 100% of all new activations by December 31, 2002. Additionally, the Commission extended the date for carriers to reach 95% penetration until December 31, 2005.

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5 *See Comments of Motorola,* CC Docket No. 94-102, (filed January 5, 2001) at 5.

6 *In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Report and Order and Further Notice of Proposed Rulemaking, CC Docket 94-102, 11 FCC Rcd. 18676 (1996).

Section 1.3 of the Commission's rules states that a rule may be waived if good cause is shown. Section 1.925(b)(3) of the rules states that the Commission may grant a request for a waiver if "the underlying purpose of the rule(s) would not be served or would be frustrated by the application in the instant case, and that a grant of the requested waiver would be in the public interest."[7] In Southern's case, good cause exists for waiving the implementation deadlines contained in Section 20.18(e) and (g) of the Commission's rules and allowing Southern to implement its proposed Phase II solution on the timetable set forth in Section V below.

The Commission's *Fourth MO&O* indicates that waivers of the E-911 Phase II requirements and deadlines must be "specific, focused, and limited in scope, and with a clear path to full compliance."[8] As evidenced in this Petition, Southern has undertaken many concrete steps necessary to come as close as possible to full compliance at as early a date as technically feasible. Since Southern is not a location technology vendor, it must rely completely upon third parties for solutions to Phase II. For this reason, while it believes that, based on discussions with its vendor, its proposed schedule is achievable, Southern cannot predict with complete precision when accurate and reliable solutions will be available for its network and its customers.

Currently, there is no location technology solution available for an iDEN-based wireless network that will fully satisfy all the Commission's Phase II requirements. Southern is aware that some location technology vendors have made claims to the Commission that Phase II technology exists for iDEN networks that would satisfy the

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7 47 C.F.R §§ 1.3, 1.925(b)(3).

8 *Fourth MO&O,* 15 FCC Rcd at ¶ 44.

FCC's accuracy and reliability requirements. Yet Southern's experience to date has been to the contrary. There is no solution suitable for an iDEN-based network that Southern can deploy in order to meet the Commission's requirements and to collect accurate call location data and transmit it through its switch to the public safety network.

The limited relief sought by Southern, as well as the benefits that will accrue to the public from a more accurate and reliable Phase II solution, satisfy the standard for a waiver of the Commission's rules. Southern's choice of an A-GPS handset solution will provide PSAPs with more accurate location information and will enable Southern to comply with the Commission's accuracy requirements, even in Southern's substantial rural service areas. Most importantly, the granting of this waiver is consistent with the Commission's public safety objectives.

III. Southern's Efforts to Identify a Phase II E-911 Solution

A. Current Status

On November 9, 2000, Southern reported that its implementation plans for Phase II E-911 would involve a network-based solution.[9] As Southern stated in the Amended Report filed on August 30, 2001, it now intends to pursue a handset-based A-GPS solution to be supplied by Motorola. To that end, Southern is filing this waiver, as Motorola has advised Southern that it will not be able to supply the first A-GPS capable handsets until October 1, 2002.

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[9] *See Report on Implementation of Wireless E-911 Phase II Automatic Location Identification*, CC Docket No. 94-102, (filed November 9, 2000), (hereinafter "November 9th Report.").

B. Southern's Small Size and Use of iDEN Technology Present Unique Challenges

Southern has been very diligent in its efforts to achieve compliance with the Commission's Phase II requirements. As a small carrier in an industry that is increasingly dominated by massive carriers like AT&T Wireless, Verizon Wireless, and Cingular Wireless, Southern faced difficulty in simply attracting the attention of location technology vendors to determine whether their products were iDEN-compatible. Clearly, vendors have foreseen greater financial rewards in selling their technology to just one of the large wireless carriers as opposed to creating a custom solution for a small carrier like Southern using a unique technology. They have thus focused their efforts accordingly. Southern is not the only small carrier to face this difficulty. Many small carriers recounted similar experiences in their respective implementation reports filed with the Commission on November 9, 2000.[10]

Furthermore, Southern utilizes iDEN technology, which is a proprietary technology developed and owned by Motorola. Because it is a proprietary technology, Motorola is the sole vendor of handsets for use on an iDEN system, and consequently, iDEN carriers expected that any handset-based solution for Phase II E-911 would ultimately have to come from Motorola. Furthermore, iDEN is the least utilized of all digital technologies found in the U.S. marketplace. Total subscriber counts number only several million, rather than tens of millions, as is the case with CDMA and TDMA. The smaller subscriber base combined with the proprietary nature of iDEN technology has

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[10] *See*, for example, the reports of the following carriers filed on November 9, 2000 in CC Docket No. 94-102: Unwired Telecom Corporation, Rural Cellular Association (representing approximately 18 carriers), RFB Cellular and Alpine Cellular.

meant that a Phase II solution for iDEN networks has received less attention from location technology vendors than have other wireless technologies. As a result, Southern had very limited options to consider in its efforts to meet the Commission's Phase II requirements.

C. Technology and Vendor Options

In its efforts to identify an E-911 Phase II solution that will comply with the Commission's requirements, Southern thoroughly explored the two main types of technology solutions - network-based and handset-based. Southern has researched these solutions in order to assess their feasibility on its network and is aware of the pros and cons of each. Network-based solutions like TDOA ("Time Difference of Arrival"), AOA ("Angle of Arrival"), and RF mapping do not involve handset modifications or change-out of handsets, and thus solution implementation involves minimal customer involvement. In contrast, handset-based solutions like A-GPS require both provisioning new handsets to new customers and persuading existing customers to acquire the new handsets. Yet, while handset-based solutions require customer involvement as part of the deployment process, they offer the potential for greater accuracy relative to network-based solutions, given the more stringent requirements put in place by the Commission. Achieving the greatest degree of accuracy possible is of critical importance to Southern, as it will better serve the Commission's public safety objectives.

Geography and cell site configuration also factor into the effectiveness of the various solutions. With network-based solutions like TDOA, a handset must "see" the requisite number of cell sites in order for the caller's location to be calculated. In areas where cell sites are remotely dispersed, such as in rural areas where cell sites are typically

separated by great distances, a handset may not be able to "see" enough cell sites for the caller's location to be calculated. On iDEN systems, the fact that an iDEN handset "powers down" (i.e. reduces its RF energy output) to conserve battery life when the user is near a cell site further complicates matters. When the handset power reduces in this fashion, its ability to "see" other cell sites is adversely affected. In such scenarios, handset-based solutions relying upon GPS technology have much greater potential to provide accurate location data because of their reliance upon achieving a "line of sight" with GPS satellites, rather than cell sites, to determine a caller's location. However, there is the potential that this solution's performance in dense urban settings may be hampered due to the handset's inability to achieve "line-of-sight" with GPS satellites through buildings.

With these technology paths in mind, Southern diligently pursued discussions with vendors to identify those with iDEN-compatible equipment that may be capable of meeting the Commission's accuracy and reliability requirements. These vendors included several network-based solutions which utilize TDOA, AOA and/or RF mapping. Southern contacted US Wireless, True Position, SigmaOne, CellTRAX, CellLoc and Grayson Wireless to discuss the possibility of working with these vendors to develop an iDEN compatible network solution.[11]

Additionally, Southern contacted vendors to discuss the potential for implementing handset-based Phase II solutions. These vendors included Motorola, Tendler, SnapTrack, and SiRF.[12] As indicated in Table 1, Motorola pursued two Phase II

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11 The discussions with these vendors is summarized in Table 1.

12 The discussions with these vendors is summarized in Table 1.

solutions for the iDEN network, an A-GPS solution and an E-OTD ("Enhanced Observed Time Difference") solution. Southern has discussed both of these potential Phase II solutions with Motorola and evaluated their capabilities. Based upon the information provided by Motorola, Southern is of the firm belief that the A-GPS solution is the best approach in terms of accuracy performance and use of network resources. Motorola's own work on E-OTD for iDEN systems demonstrated that the accuracy capabilities would fall welloutside the Commission's requirements for handset-based solutions.[13] Furthermore, on an iDEN system, the E-OTD solution would require significant RF resources. In particular, a high percentage of idle slots on the primary control channel used at each site must be available in order to calculate a caller's location -- a higher percentage than is typically available on Southern's system. Idle time slot availability would affect the solution's accuracy. It also could delay call setup time because certain location measurements must be completed prior to call setup. For these reasons, Southern did not pursue E-OTD as a permanent solution and does not consider it as even a viable interim solution.

D. Initial Technology Choice, Testing Efforts, and Change in Technology Choice

Southern filed a report with the Commission on November 9, 2000, and a clarifying letter dated December 23, 2000, in which it declared that its technology choice for Phase II would be a network-based solution. It made this declaration based upon the following considerations:

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[13] *See Nextel Communications, Inc. and Nextel Partners, Inc. Joint Report on Phase II Location Technology Implementation and Request for Waiver,* (filed November 9, 2000) at 15-16.

- *Timing and availability* – Vendors of network-based solutions represented that their products would meet the Commission's requirements for Phase II and would be available prior to October 1, 2001. Vendors of handset-based solutions – namely Motorola in Southern's case – had publicly represented that their solutions would not be available by October 1, 2001. Thus, the potential for Southern to meet the Commission's implementation schedule appeared more achieveable at that time by pursuing a network-based solution.
- *Ability to observe a product demonstration* – At least one network vendor had working iDEN-compatible equipment available for demonstration to Southern prior to November 9, 2000.
- *Possibility of multiple vendor options* – As of November 9, 2000, Southern had identified one network vendor with iDEN-compatible equipment, and although it had not received responses from several vendors, it remained hopeful that at least one additional vendor might come forth. In contrast, Motorola was the only vendor for a handset-based solution for iDEN, thus limiting Southern's options if it proceeded down that path.

E. Southern Was Not Able to Proceed With Its Original Network-Based Solution

Southern did not have an opportunity to test any vendor's equipment prior to filing its technology choice with the Commission, and thus it made its choice using the best available information. As it explained in its November 9th filing, Southern intended to test Grayson's solution on its network (specifically its TDOA equipment), based upon the promising demonstration it had observed. It hoped to test the equipment during the

first quarter of 2001. Even though Southern was hopeful about the possibility of going forward with the Grayson network solution, it also continued to discuss an A-GPS handset solution with Motorola because of the greater overall potential for accuracy that a handset solution could provide.

Southern was unable to proceed to an end-to-end test of Grayson's solution by first quarter 2001, as it initially intended, due to several factors. Southern believed end-to-end testing – including actual transmission of Phase II latitude and longitude data to a PSAP – was necessary to fully evaluate the Grayson technology on its network. Without completing an end-to-end test, all Southern would accomplish with the testing would be to verify that Grayson's equipment would perform on Southern's air interface (iDEN) and would meet the Commission's accuracy and reliability requirements from Southern's tower spacing. In other words, Southern would not be testing a Phase II solution and would not know whether it would actually be able to achieve the Commission's end goal -- the delivery of accurate Phase II latitude and longitude data to a PSAP.

In early 2001, as Southern began to organize the elements necessary for an end-to-end test, it discovered that certain components needed for the test were not part of the Grayson technology package. Specifically, certain software for installation into the base site controllers on Southern's network was not available from Grayson. This software performs the key function of sending set-up data to the Grayson equipment that triggers the equipment to gather location data for the appropriate handset when a wireless 911 call is placed.

Southern was unaware until January 2001 that this software could not be supplied by Grayson but would have to be made available by Motorola. At that point, Southern

began discussions with Grayson and Motorola to obtain the software. Southern learned that Motorola had previously developed a "test load" of this software[14] for use in the Phase II testing activities of another iDEN carrier. Actually obtaining the needed software proved to be no simple task, as Southern discussed with the Commission during an *ex parte* meeting on April 4, 2001. With technical and legal issues finally having been resolved, Southern ultimately obtained the software from Motorola in late May. Simultaneously, Southern was developing a testing plan and a testing agreement with Grayson and was pursuing execution of that agreement.

Southern also involved other parties in the end-to-end test planning. Key parties included: the PSAP in Shelby County, Alabama; BellSouth, which wanted to test its Phase II solution for wireless carriers; and NENA, which Southern hoped to involve as a neutral third party observer for the Phase II testing. Finally, in order to conduct end-to-end testing, Southern required an interface from Grayson's equipment to the public safety network to transmit the location coordinates to the PSAP. To that end, Southern held extensive discussions with another vendor, SignalSoft. SignalSoft did not have the appropriate interface available, but it was interested in the prospect of developing one.

As part of the prelude to the test, Grayson conducted a survey of the cell sites on Southern's network that would be involved in the testing. In selecting Shelby County, Alabama, as its test area, Southern wanted to be sure that a Phase II capable PSAP was available and that it would be able to test in both urban and rural types of locations that

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[14] This test load involved very basic software that could be used for a test but which would not be commercially deployable. Among other factors, it would function only for a few 911 calls at any given time and would require manual intervention in order to operate.

predominate in its footprint. Based upon the information obtained during the survey, Grayson used computer modeling to project the accuracy results that using its TDOA equipment would achieve. Once Southern reviewed these projected accuracy results, it was immediately apparent that using the Grayson TDOA solution would be problematic.[15]

Specifically, the accuracy projections developed at this point by Grayson for its TDOA equipment were not close to an acceptable range for compliance with the Commission's accuracy requirements. The Commission's rules require the following accuracy for network based solutions: 100 meters for 67% of calls and 300 meters for 95% of calls. Grayson's projections for the accuracy of its TDOA equipment were well outside the Commission's requirements. Although Grayson's solution initially appeared promising, in the end, the TDOA equipment would fall well-short of the accuracy required for Phase II if used on Southern's network.

F. Need to Select a Different Phase II Technology

Although Grayson offers both TDOA equipment (consisting of wireless location servers that are installed in the equipment room at a cell site) and AOA antennas as part of its Geometrix solution,[16] Southern was not aware until the model coverage projections were run that it would not be able to achieve the Commission's accuracy requirements using only the TDOA equipment. At the same time, adding AOA antennas to its tower sites would not be a feasible approach for achieving Phase II compliance.

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15 Contour maps indicating the projected accuracy were given to Southern subject to a Confidentiality Agreement with Grayson.

16 The solution would also require installing a server at Southern's mobile switching office, regardless of whether TDOA-only is used or if AOA antennas are used in conjunction with TDOA.

Southern reached this determination based upon multiple factors including structural concerns and space availability on tower sites used in Southern's network. Existing antenna towers may not be capable of withstanding the strain of an additional array of nine to twelve antennas and would then require structural modifications – which may not even be possible – in order to do so. In addition, Southern no longer owns most of the towers where its wireless antennas are located. Instead, it leases space on shared towers. Thus, the availability of sufficient space for additional antennas is very doubtful and not within Southern's control. Finally, the use of AOA antennas raises issues of zoning permits as well as other legal issues. As the Commission is well-aware, carriers today often experience great difficulties in navigating local zoning procedures to add cell sites, sometimes even when they are trying to add antennas to existing towers. They are never assured success, and many times achieving success is a very lengthy process. Taking all of these factors into account – structural concerns, questions of space availability, local zoning requirements, legal negotiations – and the time and cost that addressing each one would involve, Southern concluded that incorporating AOA antennas to attempt a network solution was not a feasible approach.

G. A-GPS Handset Option

Given the prospect, based upon its own projections, that Grayson's TDOA equipment would prove inaccurate, Southern did not believe that any useful purpose would be served by going forward with the end-to-end test. Since the ultimate goal of the E-911 regulations is the provision of accurate location information to identify callers in distress, Southern did not view settling for less accuracy as a meaningful approach that would satisfy the public good. Further, utilizing Grayson's equipment would have

required a waiver of both the Commission's deployment time frame and accuracy requirements due to implementation issues.[17] Thus, Southern immediately began to focus on its one remaining alternative – Motorola's A-GPS solution.

While Southern was working towards an end-to-end test with Grayson's equipment, it had continued to discuss with Motorola the possibility of deployment of an A-GPS solution for iDEN. Based upon the information shared by Motorola, which included testing results, integration information, and deployment timetables, Motorola appeared to be making significant strides towards providing its iDEN customers an A-GPS solution that would meet the Commission's accuracy requirements – albeit not by the requisite deadline of October 1, 2001.

Furthermore, Motorola's approach to A-GPS has been to develop a solution that would be integrated into iDEN's systems. Not only has Motorola been developing A-GPS capable handsets, it also has been incorporating the infrastructure hardware and

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17 An important missing component was the base station controller software needed to send set-up data to the Grayson equipment to cause it to gather location data for the appropriate handset when a 911 call is placed. As explained above, the software provided by Motorola in May 2001 for the test was model software suitable for a field test but not usable in a commercial environment. A commercial-use version of that software would still have to be developed. The second missing component was an interface between the Grayson equipment and the public safety network that would take the location data generated and transmit it out to the public safety network for use by PSAPs. As discussed above, while Southern held discussions with an interested potential vendor, it has not had assurances that the vendor would be able to supply the needed product. Finally, Southern was unsure at this point whether it would have to install the iDEN-adapted version of GSM 13 in its MSC in order to implement a network-based solution. GSM 13 provides for additional messaging in a carrier's MSC to support Phase II in accordance with industry standards. If required in order to have an end-to-end network-based solution, it will not be available prior to October 1, 2001. In short, because of the delay involved obtaining the needed components, the Grayson solution, accurate or not, would not result in a timely deployment of Phase II.

software needed to generate, gather, and transmit the location data through a carrier's network for delivery out to the public safety network. By utilizing Motorola's A-GPS solution, Southern will be able to purchase an integrated Phase II solution, rather than having to purchase components piecemeal from a variety of vendors, which would then, in turn, require integration into Southern's network.

Based on these considerations, Southern decided to change its technology choice and to proceed with Motorola's A-GPS solution. Handset-based solutions offer a greater potential for achieving more accurate caller location information. Southern has thoroughly investigated Motorola's A-GPS solution, and based upon the information provided by Motorola, Southern believes this solution will enable it to meet the Commission's accuracy requirements within a reasonable time frame.[18] Furthermore, since Motorola is developing A-GPS capable handsets and working on the development and integration of the infrastructure hardware and software needed to generate and transmit location data, using its A-GPS solution would eliminate for Southern many of the integration hurdles presented by other technologies. Integration of any Phase II solution into its network is a key concern, for without reliable integration of all necessary components, generation of location data and transmission to the public safety network cannot be accomplished. To proceed with the Motorola A-GPS solution, however, it is necessary to request this waiver of the Commission's implementation deadlines. As demonstrated above, Southern has diligently pursued the Commission's goal of access by

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18 *See Comments of Motorola, CC Docket 94-102,* (filed January 5, 2001); *See also Nextel Communications, Inc. and Nextel Partners, Inc. Joint Report on Phase II Location Technology Implementation and Request for Waiver,* (filed November 9, 2000) at 5.

wireless customers to 911 emergency services by seeking out location technology vendors to work with Southern on an iDEN compatible solution. Southern has now selected what it believes is the only feasible Phase II solution for its network and is working with Motorola towards full compliance.

IV. Grant of Waiver is Warranted, Reasonable, and in the Public Interest

Southern has made every effort to comply with the Commission's requirements for Phase II. It has diligently sought a solution that would enable it to meet both the deadlines for Phase II deployment and the requisite location accuracy. It sought information from a variety of vendors, attempted to observe product demonstrations, and planned to test the one available solution that it believed might satisfy the Commission's requirements without the need for a time extension. Unfortunately, even with these diligent efforts, there is no feasible solution available that will fully meet all of the Commission's Phase II requirements in a timely manner.

Phase I Compliance To Date

In addition, Southern has seriously and vigorously pursued its Phase I implementation responsibilities. Southern provides wireless service to many entities in the public safety community including PSAP coordinators, police departments, ambulance services and fire departments. It believes that it has proven itself to be a reliable partner with the public safety community with regard to Phase I, and it has pressed ahead with Phase I implementation in many instances even in the absence of approved cost recovery plans and agreements. Of the 104 Phase I requests that it has received to date from PSAPs within its service territory, Southern has completed deployment to ninety-three. Of the remaining eleven PSAP requests, five requests are

within the six-month timeframe. Only six are beyond the six-month timeframe due to issues of ILEC readiness or the lack of readiness by the PSAP to receive Phase I data. (See Exhibit 1)

While Southern has diligently pursued Phase I implementation where it has received requests, many PSAPs have yet to even submit requests. Southern estimates that there are 274 PSAPs within its service territory, 202 of which have enhanced services and thus would be capable of receiving Phase I call data. Of those 202 PSAPS, only 104 have submitted requests to Southern for Phase I. In Southern's territory, state laws establishing a cost recovery mechanism for both PSAPs and carriers have been in place since mid-1998 (and since mid-1999 for one state), so funding for PSAPs and disputes over costs and cost recovery have been eliminated as factors delaying Phase I implementation. Southern has even gone so far as to solicit requests from some of these PSAPs within its service territory (See Exhibit 2, a sample of a letter sent to approximately 58 PSAPs), but it cannot point to a significant upswing in the number of requests received as a result of its efforts.

Southern does not believe that this waiver will adversely affect the schedule upon which Phase II service will become available to the public in its area. In addition to carrier readiness, the degree of readiness within the public safety community for E-911 Phase II within its territory will also determine when service is available. Many jurisdictions within Southern's service territory are currently unable to utilize Phase I data, which is crucial as PSAPs must implement Phase I before they can proceed to Phase II. To date, Southern has received only six Phase II requests. It has not explored whether all of those PSAPs have acquired the necessary computer equipment and network

upgrades required to receive and utilize Phase II caller location data. Southern does not regard its obligation for compliance with Phase I or Phase II lightly, and while it recognizes its obligation to meet even one request, Southern does not foresee receiving a large number of valid Phase II requests in the coming months.

Interim Solution

In granting a waiver to VoiceStream, the Commission gave serious weight to VoiceStream's ability to implement an interim solution that allowed for somewhat improved location accuracy over Phase I, even though it did not provide the accuracy level mandated for Phase II. Unfortunately, an interim Phase II solution is unavailable for Southern. As described above, Southern had few potential options for any Phase II solution. The proposed Grayson TDOA equipment would not enable Southern to meet the Commission's accuracy requirements. Accuracy issues aside,, due to the unavailability of key components of a network *solution*, a best case scenario for its deployment would precede the availability of the first A-GPS handsets by only a few months. Thus, the Grayson equipment offers very little in terms of a timeliness advantage over A-GPS, and it would not enable Southern to meet the Commission's accuracy requirements.

Likewise, the E-OTD solution developed by Motorola for iDEN networks is not a feasible interim solution. Southern believes the shortcomings of E-OTD on an iDEN network have been well documented in this proceeding, along with the reasons why it

does not offer a practical solution – permanent or interim – for Phase II.[19] E-OTD would not meet the Commission's accuracy requirements on an iDEN network for a handset-based solution, and thus Southern rejected it for Phase II implementation. To Southern's knowledge, no other iDEN carrier expressed an interest in E-OTD, and Motorola has not continued its work to make that solution commercially available for iDEN carriers. Rather, it has focused its efforts entirely on an A-GPS solution. It is simply not possible to implement E-OTD as an interim measure at this stage since Motorola is pursuing an A-GPS solution for iDEN. As a practical matter, instead of dedicating resources to A-GPS development, Motorola would have to divert resources to E-OTD. The result would be that iDEN customers would receive a less than adequate solution initially, and they would have to wait even longer to receive the solution that offers true capability for accurate location identification.

V. Southern's Path to Compliance; Deployment Proposal in Support of Petition for Waiver

Southern's Phase II compliance plan requires the incorporation of the following equipment and software for Southern's system:

- Handsets into which A-GPS technology has been incorporated;

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19 *See Comments of Motorola*, CC Docket No. 94-102, (filed January 5, 2001), at 2-3, 5-8; *Nextel Communications, Inc. and Nextel Partners, Inc. Joint Report on Phase II Location Technology Implementation and Request for Waiver*, CC Docket No. 94-102, (filed November 9, 2000), at 16-18; *Reply Comments of Nextel Communications, Inc.*, CC Docket No. 94-102, (filed January 22, 2001), at 8-9; Nextel's *ex parte* letter to Blaise Scinto and Dan Grosh, CC Docket No. 94-102, (filed April 2, 2001), at 3.

- Serving Mobile Location Center/Gateway Mobile Location Center (SMLC/GMLC) hardware platform to provide coordination and scheduling of location resources and to serve as a location database and gateway;
- New software to be installed into Southern's mobile switching center (GSM 13 adapted by Motorola for iDEN networks);
- New software to be installed into the supporting network elements on Southern's system to pass the latitude/longitude and assist data between the handsets and the network elements; and
- GPS reference receiver network to generate the "assist" data.

Southern will obtain A-GPS capable handsets, SMLC/GMLC, GSM 13, and other network software upgrades from Motorola. Southern will also need to deliver caller latitude and longitude data from its network to the public safety network for use by PSAPs. To do so, Southern had initially planned to upgrade its current trunking system from its Feature Group D trunks to SS7 trunks in order to transmit Phase II data to PSAPs and to rely upon the services of BellSouth in doing so.[20] Southern believed that doing so would be the most effective and cost efficient way to deliver latitude and longitude data to the PSAPs. On August 13, 2001, BellSouth notified Southern that while it will continue to support E-911 Phase I, it will be unable to offer a Phase II solution. Because of this development, Southern will have to pursue another option to deliver latitude and longitude data from its network to the public safety network. In order to continue on its path to compliance, Southern has entered into discussions with other vendors. Since Southern has only recently received this notification and begun to explore other options,

[20] BellSouth provides local exchange services across most of Southern's territory.

Southern is unable at this point to inform the Commission exactly how it will interface with the PSAPs.

Proposed Deployment Schedule

Southern's intended deployment schedule is as follows:

- Initial Deployment will begin December 1, 2002;
- 5% of all new iDEN handsets sold by Southern LINC beginning December 31, 2002;
- 50% of all new iDEN handsets sold by Southern LINC by December 31, 2003;
- 100% of all new iDEN handsets sold by Southern LINC by December 31, 2004, to non-public safety customers; and
- 95% of Southern's interconnected, non-public safety iDEN customer base by December 31, 2005.[21]

Initial Deployment: At this time, Motorola has committed to delivering A-GPS capable handsets by October 1, 2002.[22] In that regard, Southern's initial deployment of

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21 Southern wishes to stress that this proposed deployment schedule is based upon the best information that it has to date. In proposing this deployment schedule, it is basing its future plans on equipment that is not yet available and whose ultimate plans have not been finalized beyond the availability of the first A-GPS handsets on October 1, 2001. As additional handset models become available after this date, Southern may find that it can indeed meet the commitments set forth above, including the 95% penetration figure. Likewise, Southern may find that meeting these commitments is not readily achievable, and it may need to revise this filing at a future date to take into account factors that are not evident today but emerge over the next two or three years. In making this statement, Southern wishes to stress that it will make a genuine, good-faith effort to meet these commitments, but at the same time, it believes that the Commission should be aware of Southern's concerns. It also believes that it is not unique as a carrier in this regard.

22 *See Comments of Motorola*, CC Docket 94-102 (filed January 5, 2001) at 3.

an A-GPS capable iDEN handset will begin December 1, 2002. Southern believes that by this date, it will have had a realistic amount of time to conduct end-to-end testing of the new handsets and accompanying network elements. Southern will want to verify that all components of the A-GPS solution perform correctly on its network and that accurate caller location data is transmitted to PSAPs.

5% of New iDEN Handsets Sold: Given that it does not plan to offer A-GPS handsets until December 1, 2002, Southern believes that a benchmark of 5% of new handsets sold by the end of that year is a reasonable and achievable goal.

50%-100% of New iDEN Handsets Sold: Motorola's efforts are focused on providing iDEN carriers with one A-GPS handset by October 1, 2002, in order for those carriers to begin to comply with the Commission's requirements. It has stated to Southern that A-GPS capability will eventually be incorporated into multiple handsets that vary in form and functionality. As it does so, Southern will incorporate those handsets into its product offering. With an expanding mix of A-GPS capable products, Southern believes that it will, over time, be able to reach the new sales levels it has set forth above in this waiver, i.e., 50% of all new iDEN handsets sold by Southern by December 31, 2003 and 100% of handsets sold by Southern by December 31, 2004.

Penetration Schedule for Public Safety Customers

As discussed with the Commission during recent *ex parte* meetings, in achieving the proposed sales benchmarks, Southern has excluded a portion of its customer base, which includes many users such as law enforcement, electric utility employees, police and fire departments, and other government employees who use Southern's service for their critical communications. Because of the nature of their work environment, many of

these customers require specially designed Motorola iDEN handsets that are much more rugged, sturdy, and powerful. These handsets are built to military specifications for shock, dust, and moisture and operate at a more powerful wattage than the typical iDEN handset used by the average customer. These handsets allow these customers to continue to communicate while performing their jobs in harsh environments.

Southern has extensively discussed this issue with Motorola. To date, Motorola's plans for A-GPS capable handsets do not encompass this particular segment of its iDEN product line, as Southern and Motorola have yet to arrive at a sound, reasonable business plan for doing so. Southern assures the Commission that it has not given up on identifying a potential approach, but at this point in time, it simply does not have one. Southern believes that this portion of its customer base will be reluctant to utilize a phone that does not have the same capabilities as their current models, and it does not believe it can force these users to accept an E-911 Phase II enabled handset which does not meet their other urgent job requirements. Thus, Southern reserves the leeway at this time to continue selling these customers the type of equipment they require, if they choose to purchase it, and it is not including sales to this portion of its customer base in setting forth its implementation schedule.

Interconnected Non-Public Safety Customer Base .

Southern is requesting a waiver until December 31, 2005 to achieve 95% penetration of its traditional business user (including its few consumer users) customer base. Based on its discussions with Motorola, Southern believes this is a reasonable, achievable schedule.

Southern decided on the above implementation schedule after careful review of various location technologies and location technology vendors, and it remains committed to deploying a location technology that complies with the Commission's Phase II accuracy and reliability requirements. Southern's decision to adopt an A-GPS solution was based on its desire to provide emergency location services that will best serve its customers and likewise enable public safety agencies to better locate callers in emergency situations.

VI. Conclusion

For all the foregoing reasons, Southern respectfully requests that the Commission grant the waiver requested herein.

Respectfully submitted,

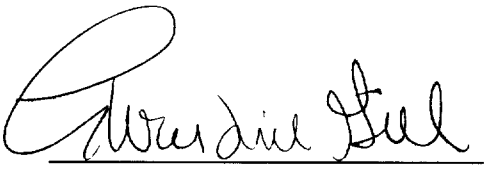

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Table 1

Results of Southern's Contacts with Location Technology Vendors

Location Technology Solution Vendor	Solution Technology	Status
US Wireless	Network	Although US Wireless initially reported that it planned to build a nationwide network, Southern has been informed that US Wireless will not be deploying its equipment in the Southeastern United States.
True Position	Network	Informed Southern (and the public) that it did not currently plan to pursue an iDEN compatible solution.
SigmaOne	Network	Informed Southern that it did not have an iDEN solution.
CellTRAX	Network	Met with Southern in December 2000 and indicated that it did not have an iDEN-compatible solution.
CellLOC	Network	Southern was unsuccessful in obtaining a response from CellLOC.
Grayson Wireless	Network	Grayson indicated to Southern that is had developed an iDEN compatible version of its Geometrix solution. Southern observed a demonstration in September 2000 pursued end to end testing with Grayson.
Motorola	A-GPS	Producing an A-GPS solution for iDEN
Motorola	E-OTD	Southern felt this solution was not a viable alternative as the accuracy results fell outside the Commission's requirements for handset-based solutions.
Tendler	A-GPS	Tendler's technology would require incorporation into handsets by a handset manufacturer, like Motorola.
SnapTrack	A-GPS	SnapTrack's technology would require incorporation into handsets by a handset manufacturer, like Motorola. Motorola has advised Southern that SnapTrack's solution was not iDEN-compatible.
SiRF	A-GPS	SiRF's technology would require incorporation into handsets by a handset manufacturer like Motorola.

EXHIBIT 1

Southern LINC Phase 1 Analysis on 08/17/2001

	AL	FL	GA	MS	Total
Date state statute became effective	#######	########	#######	#######	
Number of emergency calling districts ("ECDs") in SoLINC territory (ie. basic or enhanced	81	9	163	21	274
Number of ECDs that could request service from SoLINC (ie. enhanced ECDs)	68	9	105	20	202
Number of requests received to date	49	7	41	7	104
Number of requests completed to date (ie. we're delivering Phase I data to the PSAP)	44	5	37	7	93
Number of pending requests within 6 month timeframe	0	1	4	0	5
Number of pending requests outside 6 month timeframe and reason(s) for delay	5(1)	1(2)	0	0	6
Number of counties in SoLINC territory with No 911 service	2	0	22	1	25

(1) See Notes Worksheet
(2) See Notes Worksheet

EXHIBIT 2

Southern LINC

SOUTHERN COMPANY

Energy to Serve Your World

September 7, 2000

Ms. Camille Kimball
Appling County GA 911
401 West Parker Street
Baxley, GA 31513

Thank you for working with me in providing 9-1-1 service to Southern LINC customers in your Emergency Communications District (ECD). Without your assistance and cooperation, this essential aid would not be available to those citizens utilizing Southern LINC products and services.

Within its service territory in Georgia, Southern LINC now has the capability of providing Wireless E9-1-1 Phase 1 service to Public Safety Answering Points (PSAP) that can receive and utilize the associated information. Wireless E9-1-1 Phase 1 service enables a PSAP to view the ALI information (the address pre-assigned by your organization) of the tower where the 9-1-1 call originates and the name of our company, Southern LINC. The 9-1-1 call is identified as a wireless call, and the PSAP receives a Pseudo ANI, the pre-assigned routing number of the tower. In addition, the *callback number* of the wireless caller is delivered to the PSAP as required in FCC CC Docket No. 94-102. All of this information provides PSAPs with more detail for processing emergency calls from wireless callers, helping them to more rapidly dispatch assistance and remain in contact with the caller.

Again, Southern LINC has the capability of providing Wireless E9-1-1 Phase 1 service within its service territory in Georgia. We encourage you to consider requesting the service from us. Should you have any questions, please call me at 205/257-4911, or send your request for Wireless E9-1-1 Phase 1 service to the address below. I look forward to working with you to implement Wireless E9-1-1 Phase 1 service in your ECD.

Sincerely,

Jean H. Martin

Jean H. Martin
Emergency Coordinator 9-1-1
Southern LINC
2090 Columbiana Road – Suite 3000
Vestavia Hills, AL 36216
jhmartin@southernco.com

EXHIBIT 3

BELLSOUTH

BellSouth Interconnection Services
675 West Peachtree Street
Atlanta, Georgia 30375

Carrier Notification
SN91082565

Date: August 13, 2001

To: Wireless Carriers

Subject: Wireless Carriers – Announcement concerning Wireless E911 Phase II

Since 1998, BellSouth has provided an E911 Phase I solution that allows Wireless Carriers to be compliant with the Federal Communications Commission's Order in CC Docket 94-102 (FCC 96-264), released July 26, 1996, in the matter of Revision of the Commission's Rules To Ensure Compatibility with Enhanced 911 Emergency Calling Systems. BellSouth has determined that certain regulatory issues prevent it from offering a Phase II solution.

BellSouth will continue to offer a Phase I solution. However, BellSouth will not offer a Phase II solution. BellSouth advises you to select another solution for E911 Phase II. Other E911 solution providers include, but are not limited to GTE TSI, Intrado (formerly SCC) and XYPoint. BellSouth recommends that you contact an alternative provider so that your company can secure a Phase II compliant solution in time to meet the FCC mandate of October 1, 2001.

BellSouth can still be instrumental in assisting wireless carriers in meeting their Phase II obligations by your company choosing an alternative carrier to transport X, Y coordinates and establishing an ALI interface. BellSouth plans to offer its professional services to assist carriers in their transition to a Phase II provider. Please contact your BellSouth account team representative or Karen Nurkiewicz at 404-927-1277, if you would like to explore this option.

Sincerely,

ORIGINAL SIGNED BY MATEO CAYMOL FOR JIM BRINKLEY

Jim Brinkley – Senior Director
BellSouth Interconnection Services

CERTIFICATE OF SERVICE

I, Gloria Smith, hereby certify that on this 18th day of September 2001, I caused copies of the foregoing Petition for Limited Waiver of Section 20.18 of the Commission's Rule of Southern LINC® in CC Docket No. 94-102 was served as indicated on each of the following:

Via Courier

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(Original and 4 Copies)
Federal Communications Commission
445 Twelfth Street, S.W., TW-A325
Washington, DC 20554

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Office of Chairman Michael K. Powell
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Bryan Tramont, Senior Legal Advisor
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Kathleen Q. Abernathy
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Jordan Goldstein, Senior Legal Advisor
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Gloria Smith
Legal Secretary